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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,473	09/15/2003	Sang Seok Lee	8733.872.00-US	9223

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EXAMINER
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KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/661,473

Applicant(s)

LEE ET AL.

Examiner

George R. Koch III

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/11/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of group I, claims 1-19 in the reply filed on 3/7/2005 is acknowledged.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 12, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaynes (US 6,129,804).

Gaynes discloses an apparatus (see Figure 1) for manufacturing liquid crystal display (LCD) devices, comprising: at least one substrate bonding station (items 17 and 33) for bonding un-bonded first and second substrates, wherein the substrate bonding station includes first and second sides; at least one loader (load station 1) arranged at the first side of the substrate bonding station for loading the un-bonded first and second substrates into the substrate bonding station; and at least one unloader (output station 37) arranged at the second side for unloading bonded ones of the first and second substrates, wherein the substrate bonding station includes third and fourth sides, wherein third side is proximate the fourth side.

As to claim 2, Gaynes discloses a plurality of bonding stations (items 17 and 33).

As to claim 12, Gaynes discloses at least one hardening station (see Figures 2 and 3, items 66, and column 10, line 23 to 63) for hardening a sealant material arranged between the bonded ones of the first and second substrates, wherein the at least one hardening station is arranged proximate the fourth side of the at least one unloader and wherein the at least one unloader loads the bonded ones of the first and second substrates into the at least one hardening station.

As to claims 17 and 18, Gaynes discloses that the hardening station can direct either UV light (see column 10, lines 30-46) or direct heat (column 10, lines 55-61) to the sealant material.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1734

6. Claims 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaynes as applied to claims 1, 2, 12, 17 and 18 above, and further in view of Watanabe (US 2002/0043344 A1) and Kakinuma (US 5,961,777).

Gaynes does not disclose the concept of arrange the bonding stations parallel to each other.

Watanabe discloses that it is known to use two parallel tracks of bonding stations (40a-40d OR 41a-41d - see paragraph 0038). Kakinuma also discloses two bonding press (items 20). Kakinuma discloses that the two sets of bonding press portions so as to be able to synchronize with the overall processing speed (see column 5, lines 23-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such parallel bonding presses in order to maintain overall processing speed.

Similarly, as to claims 4-11 and 13-16, Kaninuma also discloses multiple, parallel loading and unloading structures (arms 8a-b, 12a-b, and 15a-b) and hardening structures (which cohabit with the press bonding structures). Kakinuma discloses that the two sets of bonding press portions so as to be able to synchronize with the overall processing speed (see column 5, lines 23-25). One would also appreciate that the duplication of the additional structures also maintains overall processing speed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such parallel bonding presses in order to maintain overall processing speed.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaynes as applied to claim 1 above, and further in view of Satoshi (Machine translation of JP 2001-356353).

Gaynes does not disclose that the at least one substrate bonding station includes: a lower chamber unit openings in the first and second sides; an upper chamber unit including openings in the first and second sides, the upper chamber unit being raiseable and lowerable with respect to the lower chamber unit being and joinable to the lower chamber unit; an upper stage fixed to the upper chamber unit for securing the unbonded first substrate; a lower stage fixed to the lower chamber unit for securing the unbonded second glass substrate; and a sealing member provided on a surface of at least one of the upper and lower chamber units for sealing an interior space surrounding the first and second substrates, wherein the sealed interior space is definable by joined ones of the upper and lower chamber units.

However, Satoshi discloses that the at least one substrate bonding station includes: a lower chamber unit openings (item 10) in the first and second sides; an upper chamber (item 21) unit including openings in the first and second sides, the upper chamber unit being raiseable and lowerable with respect to the lower chamber unit being and joinable to the lower chamber unit; an upper stage (items 27 and 28) fixed to the upper chamber unit for securing the unbonded first substrate; a lower stage (item 9) fixed to the lower chamber unit for securing the unbonded second glass substrate; and a sealing member (O-ring 44) provided on a surface of at least one of the upper and lower chamber units for sealing an interior space surrounding the first and second

Art Unit: 1734

substrates, wherein the sealed interior space is definable by joined ones of the upper and lower chamber units (see Figure 1 and translation). Satoshi discloses that this bonding station results in substrates that can be stuck on with a high degree of accuracy in a vacuum (paragraph 0047). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the claimed bonding station in order to bond substrates with a high degree of accuracy.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1734

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III  
Patent Examiner  
Art Unit 1734

GRK  
5/25/2005